

I CLAIM:

1. A leadframe for use in the assembly of semiconductor chips, comprising:
  - 5 a first plurality of leadframe segments, each segment of said first plurality having a narrow end portion in a first horizontal plane and a wide end portion in a second horizontal plane; and
  - 10 a second plurality of leadframe segments, each segment of said second plurality having a narrow central portion in said first horizontal plane, at least one wide central portion in said second horizontal plane, and narrow end portions in a
  - 15 third horizontal plane, said third plane located between said first and second planes.
2. The leadframe according to Claim 1 wherein said wide end portion has at least twice the width of said narrow end portion.
- 20 3. The leadframe according to Claim 1 further comprising bent segment portions to connect said segment portions in said planes.
4. The leadframe according to Claim 1 further comprising surfaces of said wide segment portions of said first
- 25 and second pluralities, which are covered by a layer of noble metal.
5. The leadframe according to Claim 4 wherein said noble metal is gold.
6. The leadframe according to Claim 1 further comprising
- 30 surfaces of said wide segment portions of said first and second pluralities, which are covered by a layer of solderable metal.

7. The leadframe according to Claim 6 wherein said solderable metal is a layer of nickel with an outermost layer of palladium.
8. The leadframe according to Claim 1 further comprising  
5 surfaces of said narrow end portions of said first segment plurality and the narrow central portions of said second segment plurality, which are covered by a layer of solderable metal.
9. The leadframe according to Claim 1 further comprising  
10 surfaces of said narrow end portions of said first segment plurality and the narrow central portions of said second segment plurality, which are covered by a layer of noble metal.
10. A semiconductor device comprising:  
15 a leadframe having a first plurality of segments, each segment of said first plurality having a narrow end portion in a first horizontal plane and a wide end portion in a second horizontal plane;  
20 said leadframe further having a second plurality of segments, each segment of said second plurality having a narrow central portion in said first horizontal plane, at least one wide central portion in said second horizontal plane, and  
25 narrow end portions in a third horizontal plane, said third plane located between said first and second planes;  
an integrated circuit chip having on its active surface a first plurality of contact pads  
30 located in the peripheral chip portions, and a second plurality of contact pads centrally located, each of said pads having an

interconnection element attached;  
said narrow end portions of said first plurality of  
leadframe segments attached to said  
interconnection elements on said first plurality  
of chip contact pads, respectively; and  
said narrow central portions of said second  
plurality of leadframe segments attached to said  
interconnection elements on said second  
plurality of chip contact pads, respectively.

11. The device according to Claim 10 further comprising an  
encapsulation material covering said chip and said  
leadframe segments, leaving exposed said wide portions  
of said first and second segment pluralities located in  
said second horizontal plane.

12. The device according to Claim 10 wherein said first  
plurality of chip contact pads and said first plurality  
of leadframe segments serve as device signal inputs/  
outputs.

13. The device according to Claim 10 wherein said second  
plurality of chip contact pads and said second  
plurality of leadframe segments serve as device power  
and ground inputs/outputs.

14. The device according to Claim 10 wherein said  
interconnection element is a bump made of reflowable  
metal or alloy.

15. The device according to Claim 10 wherein said  
interconnection element is a bump made of non-  
reflowable metal or alloy.

16. The device according to Claim 10 wherein said wide  
segment portions have surfaces covered by a layer of  
noble metal.

17. The device according to Claim 10 wherein said wide

segment portions have surfaces covered by a layer of solderable metal.

18. The device according to Claim 11 wherein said encapsulation material is a molding compound.

5 19. The device according to Claim 11 wherein said encapsulation material further leaves exposed the chip surface opposite to said active surface.

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